One Introduction

1. Summarization

Thank you for choosing our Dual Pages Color Quad . In this manual, you will learn major features of the product, and how to install and operate with the product.

Notice: All the information contained in this manual is subject to change without notification ahead of time, as we keep the right to update the product and offer updated manual.

2. Features and Functions

(1) Support 8 channels video input and display by dual pages

(2) Display time / date, and setup display position

(3) Video loss alarm

(4) Support 8 channels sensor alarm

(5) Auto dwell

(6) Support each record mode

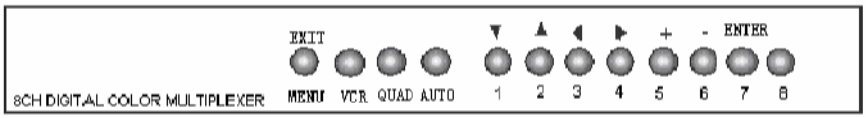
(7) Zoom image while playback

(8) Remote control by RS232 and RS485 ports

(9) Relay alarm output

Two Front Panel Buttons

1. Front Panel View



2. MENU

(1) Press 'MENU' and hold for 2 seconds when the machine is in display or playback state, and '**[PASSWORD:_]**' will appear to require users to input password. The indicator light will turn on the same time. Only by inputting the correct passwords, users can access to MENU page to change / view settings.

(2) Press 'MENU' key once again to return to the upper menu or exist MENU page.

Notice: The password is the only identity proof. Please keep the password carefully and well! The default password is 1111. In case users forget the customized password, press 'MENU' key and 'VCR' key simultaneously, and restart the machine, then users can recover the password to default value.

3. VCR

(1) When in real display state, press 'PLAY', the machine begins to play files. The monitor screen displays 'PLAY' in the upper side. Press '1', '2', '3' or '4' to see corresponding channel's full screen image.

(2) When in real display state, press 'PLAY' for 2 seconds, user can see the playback images of 4 cameras from 'VCR IN'. There is no camera title displayed. The VCR indicator light turns on then.

4.QUAD

(1) When in auto-dwell display state or real display state (not in MENU page), users press 'QUAD', the monitor will display CAM1 to CAM4 4CH images. The QUAD indicator light turns on.

(2) When in 4CH real display state, press 'QUAD' once again, the monitor will display CAM5 to CAM8 4CH images. The QUAD indicator light winks then.

(3) When in auto-dwell display state or real display state (not in MENU page), press 'QUAD' for 2 seconds, two pages will display on the screen by turn. The QUAD indicator light winks in half the speed of that in item (2). **Note:** users can set the dwell time for each page in MENU→SYSTEM SET→ RECORD TIME

5. AUTO

When in real display state, press 'AUTO' key, the system will change into auto-dwell display mode. The AUTO indicator light turns on then. Press 'AUTO' key once again, to cancel auto-dwell state, and the indicator light turns off.

6.Other keys

'1' '2''3''4''5''6''7''8' OR

'↓' '↑' '←' '→' '+' '' 'ENTER', '8'

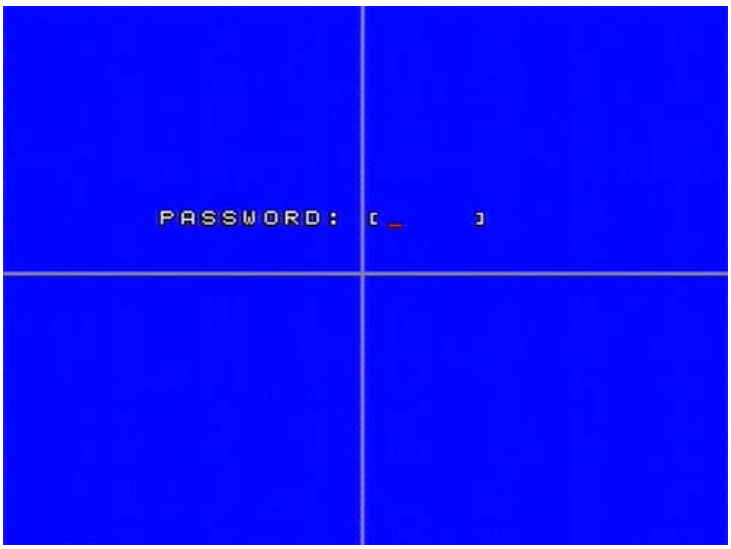
(1) When in 4CH display state, press the number key, then users can see the corresponding channel's full screen image.

(2) When in playback state, press '1', '2', '3' or'4', users can see the corresponding channel's full screen playback image.

(3) When in MENU page, press '↓' , '↑' '←' and '→' to move the cursor upward, downward, leftward and rightward, and press '+' and '-' to increase and decrease values on cursor, and press 'ENTER' to turn to the next menu or confirm change of corresponding values.

Three Menu Setup

Please access to corresponding menus, including main menu and sub menus to make system setup. When in real display or playback state, press MENU for 2 seconds, and input user's password in the area shown in the following figure to enter menu setup page. Users can change password in certain menu setup page. Without inputting correct password, user cannot access to the menu setup pages.



When in the menu setup pages, press '↓' and '↑' to move the cursor downward and upward, and press '+' and '□' to change values on the cursor, and save the values at the same time.

Press 'ENTER' key to enter the sub menu. When in the main menu page, press MENU key, then exist menu setup and return to former mode. When in sub menu setup state, press MENU key, the present sub menu will exist and return to the upper menu.

Press 'MENU' key, hold for 2 seconds, and then input the right password, users can enter the following page:

At the right bottom, the driver and hardware version numbers are displayed.

In case there is no action with the menu for 3 minutes, the system will automatically return to the former display mode.

1. SYSTEM SETUP

Select 'SYSTEM SET' in the MAIN MENU, and enter the following SYSTEM SET sub menu:

Press '↓' and '↑' to move upward and downward among the setup items, then press '+' and '□' to set values.

- TIME: System date and time. The default ASIA time and date formats are: YYYY/MM/DD (Year/Month/Day), HH/MM/SS (Hour/Minute/Second)
- FORMAT: Date format. Users can select among ASIA format, U.S. format and EURO format.
- LIVE TIME DISP: Time and date display position. TOP: top center, TOP_LEFT: top left, TOP_RIGHT: top right, NON: no display
- BORDER DISP: rim color. Three color options: GRAY, WHITE and BLACK, and users can also select OFF
- BACK COLOR: background color. Two options: BLUE and BLACK
- VFILTER: video filter. ON: soft, OFF: sharp and clear
- BUZZER: buzzer alarm. ON: switch on, OFF: switch off
- ALARM TIME: select alarm holding time, 3 to 255 seconds adjustable
- DWELL TIME: auto dwell time when in each record mode (share-time record mode)
- PASSWORD: user's 4 digits password. Any number composed by 1 to 8.
- FORMAT: video format. Two options: PAL and NTSC. PAL is the default setting.
- PROTOCOL: communication protocol. Four options: PTC1, PTC2, PTC3, PTC4
- BAUD: baud rate. Five options: 1200, 2400, 4800, 9600, 19200 bps
- DEVICE ID: control address, adjustable among hexadecimal numbers, 00 to FF. When using computer to control multiple quads, it's maximum to control 256 quads. But make sure to change 232 port into 485 bus.

2. CAMERA SET

Select 'CAMERA SET' in MAIN MENU, and press 'ENTER' to enter the following 'CAMERA SET' sub menu. Press '↓' and '↑' to move upward and downward among the setup items, then press '+' and '□' to set values.

- CAM: camera image sequence number, 1 to 8
- PICTURE DISPLAY: switch ON / OFF picture
- TITLE DISPLAY: switch ON / OFF camera title display
- CAMERA TITLE: edit title for cameras. Users can select from 10 digits, 26 capital letters, 26 small letters and signs
- AUTO TIME: auto dwell time, 0 to 99 second
- PICTURE QUALITY: set image quality. Please refer to the next chapter '**3. PICTURE QUALITY**' to learn more.
- SENSOR SWITCH: switch ON / OFF sensor alarm
- SENSOR LEVEL: sensor alarm voltage. HIGH: high voltage, LOW: low voltage
- DETECT TIME: sensor alarm working time
- ALARM OUT: alarm output
- LOSS: switch ON / OFF video loss alarm
- SENSOR: switch ON / OFF sensor alarm output

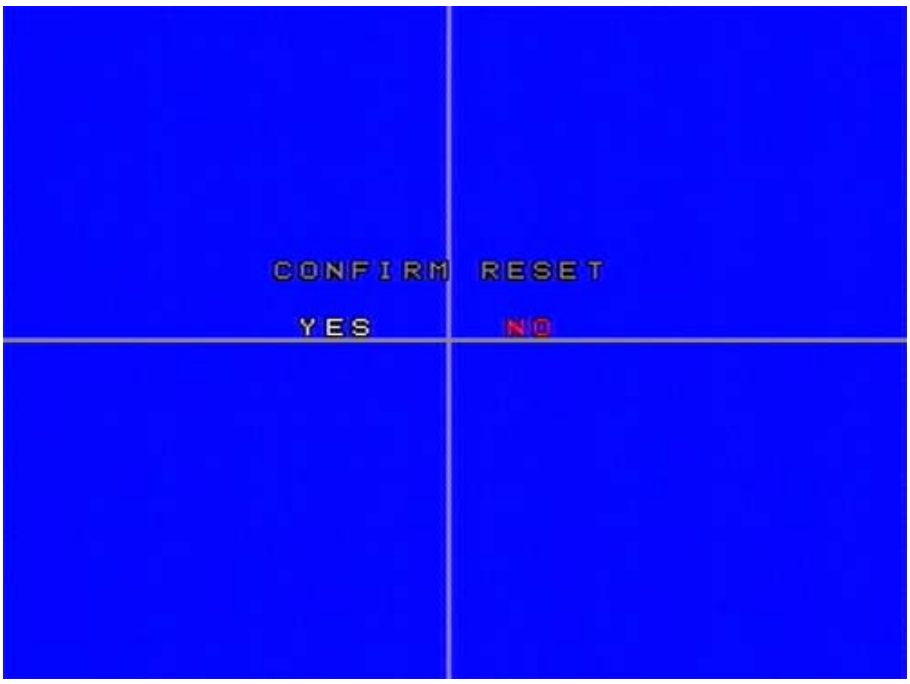
3. EVENT LIST

Select 'EVENT LIST' in MAIN menu, and press ENTER key to enter EVENT LIST sub menu as below:

- NO: alarm event's sequence number. 100 records from 001 to 100
- CAM: the sequence number of the camera that recorded a certain event
- DATA: date of an alarm event
- TIME: time of an alarm event
- EVENT: cause of alarm event. P_ON: boot-strap alarm, LOSS: video loss alarm, MOTION: motion detection alarm, SENSOR: sensor alarm
- PREVIOUS: last page. Every page displays 10 events. Press '↑' or select NEXT and press ENTER to return to the upper page.
- NEXT: next page. Every page displays 10 events. Press '↓' or select NEXT and press ENTER to turn to the next page
- ERASE: delete all the event record and begin to record from 001

4. DEFAULT RESET

In case users want to restore all the settings to factory default values, first select 'DEFAULT RESET' and press ENTER key, then the following page appears:



Select YES to confirm reset, and select NO to cancel and return to menu setup.

Four Operations

1. Loss Video Alarm

In case camera video signal has lost, buzzer will beep (optional), monitor screen will display 'LOSS' and indicator light will wink at the same time. Press any button or recover the lost video signal, then buzzer will stop beeping.

2. Sensor Alarm

In case users enabled motion detection alarm function, once the system's detected image motion, buzzer will buzz (optional), and monitor screen displays 'SENSOR' in corresponding channel and indicator light winks. Press any button or after the alarm holding time is over, buzzer stops buzzing.

3. Confirm Alarm

There are two methods to confirm alarm, manual mode and auto mode. When the system is in menu setup state or playback state, users have to use auto mode. But warning characters and indicator light must be confirmed manually, or the notice and winking light will always be there. In case users don't confirm alarm in the alarm holding time, system will make auto confirm.

(1) **Buzzer alarm confirm:** when the system is in the state that users can make manual confirm, press any key to confirm alarm and buzzer will stop beeps. In case another alarm appears, but there is already an alarm waiting for conformation, then buzzer alarm won't happen for the next alarm. Only when there is no other alarm waiting for confirmation, new alarm can trigger buzzer to beep. Users can set alarm holding time in ALARM TIME sub menu in SYSTEM SET.

(2) Confirm Warning Characters: when system is in real display state and alarm happens, then press '1', '2', '3', … '8' to clear away corresponding channel's warning characters and make the indicator light stops winking.

4.Playback (VCR)

When system is in real display mode and not in menu setup or AUTO state, then:

(1) Press PLAY key for once, then PLAY indicator light turns on, and monitor screen displays 'PLAY' on the upper side, and playback begins. In case there is no video signal input for playback, then the monitor displays 'NO PLAY VIDEO'. Press PLAY key in playback state, and then PLAY indicator light turns off, and system return to real display mode. Users can zoom corresponding playback image, but it will affect recording.

(2) Press PLAY key for 2 seconds, then PLAY indicator light winks, and no character displayed on screen, and playback begins. In case there is no video signal input, the monitor

screen will display default bootstrap image. Press PLAY key for once, then PLAY indicator light turns off, and system returns to real display state. Users cannot zoom playback image and it won't affect recording either.

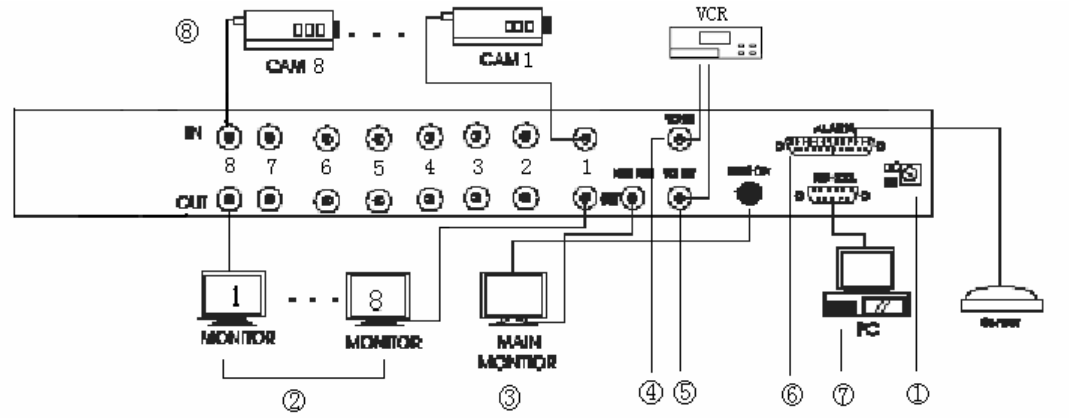
5. AUTO Dwell (AUTO)

Press AUTO key in real display state, then AUTO indicator light turns, and system enters full screen auto dwell state, and corresponding indicator light winks. The time period is adjustable in AUTO TIME in CAMERA SET. When in auto dwell state, press AUTO key again, AUTO indicator light turns off and system exists auto dwell state.

Five System Connection and Control

1. Rear Panel View

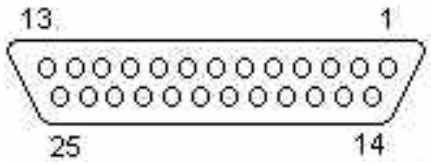
The rear panel connection sketch map is as below:



EXPLANATIONS:

- - Direct current input
- - Video output
  Eight output connects. Users can connect to 8 monitors or other kind of video terminals.
- - Monitor input
  Connect to a monitor to make surveillance
- - VCR input
  Connect to VCR's video output connector, and play back recorded files
- - 4CH video output
  Connect to VCR's input connect to record files
- - Sensor alarm and triggering signal input
  DB25 connector
- - RS232 / RS485 remote control connector
  DB29 connector
- - Video input
  Maximum 8 channels camera video signal input or other standard video signals.

2. Alarm connector



Explanations:

(1) 1 – 8: ALARM IN. mechanical alarm input, and voltage is adjustable. Connect to sensor devices.

(2) 12: TRIGGER: trigger signal input, connect to VCR trigger output connector

(3) 14: ALARM N.C.: relay normal close end, connect to alarm

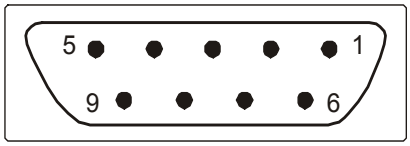
(4) 15: ALARM COM: relay public end, connect to alarm

(5) 16: ALARM N.O.: relay normal open end, connect to alarm

(6) 24: GND

(7) 25: VCC (+5V)

3. Remote control connector and communication protocol



DB9 connector:

2. TXD 3. RXD 5. GND 8. B 9. A

Notice: Pin 8 and 9 are used for RS422

Serial port's remote control function enables users to control the quad through a PC or ASCII communication terminal. The quad takes special commands as the key-pushing commands in the front panel, and every command represents one or a combination of keys. Any operation on the front panel can be done remotely, as serial port imitates key-pushing operation. (Please refer to foregoing relevant menu instructions for choosing protocols)

1) **PTC 1** (ROBERT) (Fixed length character string)

Serial port setup: BAUD, n, 8,1(BAUD =1200,2400,4800,9600,19200)

Command (CHAR)	Hex Number	Function Description	Note (keyboard)
/AF	0x2F 0x41 0x46	MENU	FUNC+FULL
/PP	0x2F 0x50 0x50	/up arrow	
/22	0x2F 0x32 0x32	2X2 /down arrow	
/33	0x2F 0x33 0x33	/ left arrow	
/44	0x2F 0x34 0x34	/ right arrow	
/LV	0x2F 0x4C 0x56	LIVE/ add	
/TP	0x2F 0x54 0x50	VCR/ dec	
/SL	0x2F 0x53 0x4C	/EXIT	
/SQ	0x2F 0x53 0x51	AUTO/ENTER	
/FZ	0x2F 0x46 0x5A	FULL	
/01	0x2F 0x30 0x31	Cameras1	
/02	0x2F 0x30 0x32	Cameras2	
/03	0x2F 0x30 0x33	Cameras3	
/04	0x2F 0x30 0x34	Cameras4	
/05	0x2F 0x30 0x35	Cameras5	
/06	0x2F 0x30 0x36	Cameras6	
/07	0x2F 0x30 0x37	Cameras7	
/08	0x2F 0x30 0x38	Cameras8	

2) **PTC 2** (ROBERT_EXT) (Fixed length character string)
Serial port setup: BAUD,n,8,1(BAUD =1200,2400,4800,9600,19200)

Transmitting Sequence No.	Transmitting value	Note
Byte0	0x03	Fixed length
Byte1	0xaa	Quad recognizing character
Byte2	0x01	Fixed length
Byte3	Device id	Quad address
Byte4~6	Refer to PTC 1 (ROBERT)	Same command as PTC1(ROBERT)

3) PTC 3
Serial port setup: BAUD,n,8,1(BAUD =1200,2400,4800,9600,19200)
PC sends off (changeable length character string)

buf_232[0]	0xa0	Start mark
buf_232[1]	counter	Data length (n+1)
buf_232[2]	0x00~ff	MU8 device address
buf_232[3]	function	Function code
buf_232[4]		
buf_232[n]		
buf_232[n+1]		check_sum

/function 0x01_key_function□ 0x02_ write eeprom□
0x03_ read eeprom□ 0x04_ disp mode change□
0x05_restart□ 0x06_general message query

eeprom command: buf_232[4]__change character length□buf_232[5]__eeprom starting address perch□ buf_232[6]__eeprom starting address low□
buf_232[7]….__change value

Function code(buf_232[3])□
0x01 key_function command□buf_232[4][5][6] is the same as PTC 1 (ROBERT)

Function code(buf_232[3])□
0x02 write eeprom

PC sends off (changeable length character string)

Byte0	0xa0	Start mark
Byte1	counter	Data length (n+1)
Byte2	0x00~ff	MU8 device address
Byte3	0x02	Function code
Byte4	length	1~8 (maximum 8)
Byte5	high addr	0x00~0x07
Byte6	low addr	0x00~0xff
Byte n	Data n	0x00~0xff
Byte Byte[n+1]		check_sum

Function code(buf_232[3])□
0x03 read eeprom
PC receives (changeable length character string)

Byte0	0xa0	Start mark
Byte1	counter	Data length(n+1)
Byte2	0x00~ff	MU8 device address
Byte3	0x03	Function code
Byte4	length	1~8 (maximum 8)
Byte5	high addr	0x00~0x07
Byte6	low addr	0x00~0xff
Byte n	Data n	0x00~0xff
Byte Byte[n+1]		check_sum

Function code(buf_232[3])□

0x04 display mode□

Note: cannot change mode when system is in playback mode

PC sends off (changeable length character string)

Byte0	0xa0	Start mark
Byte1	counter	Data length(n+1)
Byte2	0x00~ff	MU8 device address
Byte3	0x04	Function code
Byte4	dumo_num	
Byte5	buf_cam[0]	n
Byte6	buf_cam[1]	n
Byte Byte[n+1]		check_sum

Byte4:dumo_num---- LFULL(00), L4(01)

buf_cam[n]□n----0~7

PC receives□same as common search results

Function code (buf_232[3])□

0x05 restart□

PC receives□same as common search results

Function code(buf_232[3])□

0x06 Common search result

PC receives(fixed length character string)

Byte0	Byte1	Byte2	Byte3		Byte11
0xa0	0x0b	0x01~ff			
Start mark	Data length	MU8 device address			check_sum

Byte5: errorcode
Byte6: demo_num
Byte7: menu_num
Byte9: bit(1)—auto_flag , bit(0)—freeze_flag

```
byte check_sum(void)
{
    byte i;
    word wtemp = 0;
    for(i=1; i<buf_232[1]; i++)
    {
        wtemp += buf_232[i];
    }
    wtemp = 0xffff - wtemp;
    i = wtemp;
    return (i);
}
```

4) **PTC 4**

(PELCO) (Fixed length character string)

Baud rate	Parity bit	Data bit	Stop bit	Device address
N	None	8	1	0

Note：N=1200,2400,4800,9600,19200

Protocol description： Protocol length：8 bits

Byte 1	Byte 2	Byte 3	Byte4	Byte 5	Byte6	Byte 7	Byte8
0xa0	Addr	0x00	0x07	0x00	Var	0xaf	checksum

The 6th bit function description：

Byte6	key	Function description
0x01	Cam01	Cameras1
0x02	Cam02	Cameras2
0x03	Cam03	Cameras3
0x04	Cam04	Cameras4
0x05	Cam05	Cameras5
0x06	Cam06	Cameras6
0x07	Cam07	Cameras7
0x08	Cam08	Cameras8
0x11	/AF	MENU
0x12	/PP	/ up arrow
0x13	/22	2X2 / down arrow
0x14	/33	/ left arrow
0x15	/44	/ right arrow
0x16	/LV	LIVE / add
0x17	/TP	VCR / dec
0x18	/SL	/ EXIT
0x19	/SQ	AUTO / ENTER
0x1a	/FZ	FULL

The 8th bit function description□

Byte8 = Byte1^ Byte2^ Byte3^ Byte4^ Byte5^ Byte6^ Byte7

^ □Other OR